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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,464	05/03/2007	Marsha A. Moses	C1285.70006US01	5882

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EXAMINER	
HARRIS, ALANA M	

ART UNIT	PAPER NUMBER
1643	

MAIL DATE	DELIVERY MODE
08/23/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/585,464	MOSES ET AL.	
	Examiner	Art Unit	
	Alana M. Harris, Ph.D.	1643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 May 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4,6,7,9-16 and 20-55* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,4,6,7,9-16 and 20-55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *05/25/2010*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendments and Arguments

1. Claims 1, 3, 4, 6, 7, 9-16 and 20-55 are pending.

Claims 44-55 have been added.

Claims 1, 3, 4, 6, 7, 9-16 and 20-55 are examined on the merits.

Maintained and New Grounds of Rejection

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 44-46, 48-50, 52-54 are rejected under 35 U.S.C. 102(b) as being anticipated by WO document, WO 01/66557 A1 (published 13 September 2001/ IDS reference number 3 submitted May 25, 2010). The WO document discloses a protein encoded by gene no: 2 is human ADAM12 protein, see page 12, section 41. Antibodies directed to this protein are used for the diagnosis of

diseases in a biological sample, see page 13, section 44; page 14, section 46; page 59, section 178; page 89, section 266; and page 90, sections 267-269. Biological samples include body fluids (such as sera, plasma, urine) and tissue biopsies, see page 97, section 297; page 107, section 329; and pages 108-109. The disclosed antibodies can be used in methods of diagnosis of cancers such as gastric, ovarian, lung, liver, breast and bladder, see section 427 bridging section 427.

4. The rejection of claims 38-43 and new claims 44-49, 51-53 and 55 under 35 U.S.C. 102(e) as being anticipated by Berger et al./ U.S. Patent Application Publication number 2003/0148410 A1 (filed November 21, 2002) is maintained and made.

Applicants aver the prior art "...does not teach methods for facilitating the diagnosis of cancers of epithelial origin using patient samples selected from the group consisting of urine, sputum, cerebrospinal fluid, and nipple aspirates" and "...the samples...in claims 38-43 are not colon-associated body fluids", see Remarks filed May 25, 2010, page 10, 4th and 5th paragraphs. These arguments and points of view have been carefully considered, but found unpersuasive.

Applicants' claims do not exclude detecting colon cancer, a cancer of epithelial origin. Assuming arguendo, urine, as well as the other disclosed biological samples of Berger are not known exclusively as "colon-associated

body fluids". The term, "samples" is mentioned broadly, as well as in the context of colon tissue samples, colon lavage fluids and lymph fluids, see page 3, section 0048. Moreover, Berger discloses not only can colon cancer be diagnosed or identified, but ovarian, lung, cervical, breast and prostate cancer may also be identified using the disclosed methodology, see page 3, section 0048; page 4, section 0058; and page 11, section 0118. For these reasons and those of record the rejection is maintained, made and reiterated.

Berger discloses methods for detecting and characterizing human colon cancers implementing assays determining the level of a marker protein, see abstract; and sections 0276-0299 beginning on page 31. Colon cancer is a cancer of epithelial origin and claims 38-43 do not exclude colon cancer. Table 1 lists all of the markers disclosed in the invention including ADAM 12, art known as a disintegrin and metalloproteinase domain 12 or meltrin alpha, see page 4, section 0060 and the table. The ADAM 12 marker can be detected blood fluids, stool, colon lavage fluids, lymph fluids and urine via an antibody which is labeled by several means, see page 3, section 0048; page 10, section 0114; and page 33, section 0300.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The rejection of claims 1, 3, 4, 6, 7, 9-16, 20-43 and new claims 44-49, 51-53 and 55 under 35 U.S.C. 103(a) as being unpatentable over Iba et al. (Am J. Pathol. 154(5):1489-501, May 1999), and further in view of Berger et al./ U.S. Patent Application Publication number 2003/0148410 A1 (filed November 21, 2002) is maintained and made.

Applicants argue "the substitution of tumor tissue samples taught by Iba...with the colon-associated fluids of Berger...would not have yielded a predictable result", see page 11 of the Remarks. Applicants further assert the prior art does not "...teach ADAM12 can be used to detect and characterize cancer of epithelial origin using biological fluids in general", Remarks submitted May 25, 2010, page 11. These arguments and points of view have been carefully considered, but found unpersuasive.

Applicants have not presented any scientific evidence that teaches away from one of ordinary skill in the art implementing tissue samples to assess ADAM12 expression and diagnosing epithelial cancers. Applicants further assert the teachings of Iba would have dissuaded the skilled artisan that

ADAM12 could be used in a method for detecting cancer of epithelial origin in urine and blood samples, see page 12, 1st full paragraph of Remarks. Applicants state the secreted form of ADAM12 is present in both normal and cancer tissues. As presented in the 102(e) retort Berger teaches assaying samples in general for the diagnosis of not only colon cancer, but ovarian, lung, cervical, breast and prostate cancer as well, see page 4, section 0058; and page 11, section 0118. Applicants' claims do not include an antibody that differentiates between the two different forms of ADAM12. For these reasons and the reasons of record the rejection is made and maintained.

7. Claims 1, 3, 4, 6, 7, 9-16 and 20-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iba et al. (Am J. Pathol. 154(5):1489-501, May 1999), and further in view of WO document, WO 01/66557 A1 (published 13 September 2001/ IDS reference number 3 submitted May 25, 2010) and Berger et al./ U.S. Patent Application Publication number 2003/0148410 A1 (filed November 21, 2002). Iba teaches "[t]he distribution of ADAM 12 in... 37 human carcinomas compared with the normal counterpart tissue... investigated by immunohistochemistry", see page 1493, Results section. These tissue specimens are from human carcinomas comprising ductal breast carcinoma, adenocarcinoma of the colon and rectum, squamous cell carcinoma of the lung and adenocarcinoma of the stomach, see page 1490, Tissue samples...section. Adjacent nontumorous tissues were also investigated. "All 15 cases of breast

carcinomas exhibited intense ADAM 12 immunoreactivity (Figure 1A) using several different antibodies, whereas in normal breast tissue, only a few scattered luminal cells of the ducts exhibited ADAM 12 immunoreactivity (Figure 1E)", see page 1493, Results section. Labeled monoclonal antibodies to human ADAM 12 were implemented in the immunohistochemistry assays, see page 1490, Antibodies and Immunohistochemistry...sections; and Figure 1 on page 1494. Iba does not teach the disclosed method, wherein a biological sample assayed for ADAM 12 is urine and tissues sampled are bladder and prostate.

The WO document teaches a protein encoded by gene no: 2 is human ADAM12 protein, see page 12, section 41. Antibodies directed to this protein are used for the diagnosis of diseases in a biological sample, see page 13, section 44; page 14, section 46; page 59, section 178; page 89, section 266; and page 90, sections 267-269. Biological samples include body fluids (such as sera, plasma, urine) and tissue biopsies, see page 97, section 297; page 107, section 329; and pages 108-109. The antibodies can be used in methods of diagnosis of cancers such as gastric, ovarian, lung, liver, breast and bladder, see section 427 bridging section 427. Moreover, Berger discloses not only can colon cancer be diagnosed or identified, but ovarian, lung, cervical, breast and prostate cancer may also be identified using the taught methodology, see page 3, section 0048; page 4, section 0058; and page 11, section 0118. The ADAM 12 marker can be detected blood fluids, stool, colon lavage fluids, lymph fluids

and urine via an antibody which is labeled by several means, see page 3, section 0048; page 10, section 0114; and page 33, section 0300.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the claimed invention was made to combine all the teachings of all the documents to assay a plethora of biological samples for ADAM 12, particularly a urine sample, blood or serum. One of ordinary skill in the art would have been motivated to do so with a reasonable expectation of success by the teachings of Berger. Berger implemented a diagnostic assay using urine, blood fluids as test samples and ADAM 12 is clearly and definitively associated with cancer, see WO document; Berger, page 3, section 0048 and page 33, section 0300; and Iba, abstract.

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or

patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. The provisional rejection of claims 1, 3, 4, 6, 7, 9-16, 20-43 and new claims 44, 45, 48, 49, 52 and 53 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 21, 23 and 42 of copending Application No. 12/085,134/ U.S. Patent Application No. 20090215102 (filed April 14, 2009) is maintained and made.

Applicants simply assert once the claims are found allowable, Applicants will address the rejection, see Remarks, page 13. This point of view has been carefully considered, but found unpersuasive. The rejection is maintained for the reasons of record and Applicants' limited response. The rejection is reiterated.

Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims read detecting ADAM 12 in biological samples.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Alana M. Harris, Ph.D. whose telephone number is (571)272-0831. The Examiner works a ***flexible schedule***, however she can normally be reached between the hours of 8 am to 8 pm, with alternate Fridays off.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Larry R. Helms, Ph.D. can be reached on (571) 272-

0832. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Alana M. Harris, Ph.D.
06 August 2010
/Alana M. Harris, Ph.D./
Primary Examiner, Art Unit 1643